Listing of Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in **bold and underline**, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[ ]].

Please amend claims 1-4, 7, 8, 11, and 12 as indicated below.

Please add new claim 17.

1. (Currently Amended) A discharge power supply apparatus for supplying a direct current voltage to a discharge load and discharging the same, comprising:

an inverter circuit that converts direct current voltage to alternating current voltage;

a full-wave rectifier circuit that has a plurality of diodes and rectifies ~~an~~ **said** alternating current voltage generated by said inverter circuit; and

a trigger capacitor **separately** connected in parallel to ~~a portion~~ **at least one** of said diodes of said full-wave rectifier circuit **to store a charged voltage,**

wherein, at the start of the discharge of said discharge load, a trigger voltage that is higher than a stationary output voltage is supplied to the discharge load, **said trigger voltage being generated by superimposing said charged voltage stored in said**

trigger capacitor on a direct current voltage obtained by rectifying said alternating current voltage by said full-wave rectifier, and after the start of ~~the~~ stationary discharge **of said discharge load**, the direct current voltage output by said full-wave rectifier circuit is supplied to said discharge load.

2. (Currently Amended) A discharge power supply apparatus according to claim 1, wherein said full-wave rectifier circuit is a full-bridge rectifier circuit including two serially connected pairs of diodes, and ~~the~~ **said** trigger capacitor is connected in parallel to any one of ~~the~~ **said** pairs of said diodes.

3. (Currently Amended) A discharge power supply apparatus according to claim 1, further comprising a transformer having a primary winding, to which ~~the~~ **said** alternating current voltage output by said inverter circuit is supplied, and a secondary winding **connected to said full-wave rectifier circuit.**

4. (Currently Amended) A discharge power supply apparatus according to claim 3, wherein said transformer has two of said secondary windings, said two secondary windings are connected together serially, said full-wave rectifier circuit is a center tap rectifier circuit, said center tap rectifier circuit is connected to said two secondary windings, and said trigger ~~capacitors are~~ **capacitor is** charged up to a voltage equal to the sum of ~~the~~ voltages generated by said two secondary windings.

5. (Original) A discharge power supply apparatus according to claim 1, wherein, if the leakage current flowing through said discharge load before the start of the discharge is denoted It(A), the stationary discharge voltage is denoted E(V), and the frequency of the alternating current voltage output by said inverter circuit is denoted F(Hz), then the capacitance C(F) of said trigger capacitor is C>It/(E×F), and the capacitance C(F) is equal to or less than the capacitance at which full-wave rectification is carried out when said discharge load is in the stationary discharge state.

6. (Original) A discharge power supply apparatus according to claim 2, wherein, if the leakage current flowing through said discharge load before the start of the discharge is denoted It(A), the stationary discharge voltage is denoted E(V), and the frequency of the alternating current voltage output by said inverter circuit is denoted F(Hz), then the capacitance C(F) of said trigger capacitor is C>It/(2×E×F), and the capacitance C(F) is equal to or less than the capacitance at which full-wave rectification is carried out when said discharge load is in the stationary discharge state.

7. (Currently Amended) A discharge power supply apparatus according to claim 1, wherein **additional** capacitors are respectively **and separately** connected in parallel to all of ~~the~~ **said** diodes **other than that connected by said trigger capacitor** in said rectifier circuit, ~~and~~ one of ~~the~~ **said additional** capacitors is ~~a~~ **an other** trigger

capacitor, **and said trigger capacitor and said other trigger capacitor** ~~that has~~ **have** an electrostatic capacitance ~~that is~~ substantially larger than ~~that~~ **those** of the others of **said additional** capacitors.

8. (Currently Amended) A discharge power supply apparatus according to claim 1, wherein ~~the~~ **said plurality of** diodes of said rectifier circuit comprise a plurality of diodes connected serially, **additional** capacitors are respectively **and separately** connected in parallel to ~~the~~ **said** plurality of serially connected diodes **other than that connected by said trigger capacitor,** ~~and~~ **at least one of said additional capacitors** ~~a portion of the capacitors among these capacitors are~~ **is an other** trigger capacitor**, and said trigger capacitor and said other trigger capacitor** ~~having~~ **have** a capacitance substantially larger than **those of** the ~~other~~ **others of said additional** capacitors.

9. (Original) A discharge power supply apparatus according to claim 7, wherein, if the leakage current flowing through said discharge load before the start of the discharge is denoted It(A), the stationary discharge voltage is denoted E(V), and the frequency of the alternating current voltage output by said inverter circuit is denoted F(Hz), then the capacitance of said trigger capacitor is greater than the capacitance of the other capacitors by It/(E×F) or more, and is equal to or less than the capacity that carries out a full-wave rectification when said discharge load is in the stationary discharge state.

10. (Original) A discharge power supply apparatus according to claim 3, wherein said inverter circuit is a multi-phase inverter, said transformer is a multi-phase transformer having a plurality of primary windings and secondary windings, and said rectifier circuit is a multi-phase rectifier circuit having a plurality of diode arms.

11. (Currently Amended) A discharge power supply apparatus for supplying a direct current voltage to a discharge load and discharging the same, comprising:

an inverter circuit that converts direct current voltage to alternating current voltage;

a full-wave rectifier circuit that rectifies an alternating current voltage generated by said inverter circuit;

a trigger capacitor and a trigger diode is connected in series between ~~the~~ **an** input side and ~~the~~ **an** output side of said full-wave rectifier circuit; and

a charging diode connected between the input side of said full-wave rectifier circuit and the junction of said trigger capacitor and said trigger diode,

wherein, at the start of ~~the~~ discharge **of said discharge load**, the voltage of said trigger capacitor is superimposed on the voltage of said secondary winding to supply to the discharge load a trigger voltage that is higher than ~~the~~ **a** stationary output voltage **of said discharge power supply apparatus,** and after the start of ~~the~~ **a** stationary discharge

of said discharge load, a direct current power output from said full-wave rectifier circuit is supplied to said discharge ~~source~~ **load.**

12. (Currently Amended) A discharge power supply apparatus according to claim 11, wherein a smoothing capacitor or a smoothing capacitor and a bypass diode are provided at the output of said full-wave rectifier circuit, and ~~the~~ **a** cathode of said trigger diode and ~~the~~ **a** cathode of said bypass diode are connected.

13. (Original) A discharge power supply apparatus according to claim 11, further comprising a transformer having a primary winding, to which the alternating current voltage output by said inverter circuit is applied, and a secondary winding.

14. (Original) A discharge power supply apparatus according to claim 13, wherein said transformer has two connected serially secondary windings, said full-wave rectifier circuit is a center tap rectifier circuit comprising a pair of diodes connected serially to each of the terminals of said two secondary windings, and said charging diode is connected between the junction of said two connected serially secondary windings and the junction of said trigger capacitor and said trigger diode.

15. (Original) A discharge power supply apparatus according to claim 13, wherein said transformer has two connected serially secondary windings, said full-wave

rectifier circuit is a center tap rectifier circuit comprising a pair of diodes connected serially to each of the terminals of said two secondary windings, and said charging diode is connected between the other terminal of said two connected serially secondary windings and the junction between said trigger capacitor and said trigger diode.

16. (Original) A discharge power supply apparatus according to claim 11, wherein the capacitance C(F) of said capacitors has values that satisfy the formula:

$C>It/(F\times E)$

where It(A) denotes the discharge current before the start of the discharge, E(V) denotes the discharge voltage of the stationary discharge state, and F(Hz) denotes the converted frequency of the inverter circuit, and the capacitance C(F) is equal to or less than the capacity for carrying out full-wave rectification when said discharge load is in the stationary discharge state.

17. (New) A discharge power supply apparatus according to claim 1, further comprising a capacitor connected in parallel to the output of said full-wave rectifier circuit.